

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
25 August 2005 (25.08.2005)

PCT

(10) International Publication Number
WO 2005/078468 A2

(51) International Patent Classification⁷: G01R 33/34

(21) International Application Number: PCT/US2005/001813

(22) International Filing Date: 20 January 2005 (20.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 60/537,782 20 January 2004 (20.01.2004) US

(71) Applicant (for all designated States except US): THE UNIVERSITY OF HOUSTON SYSTEM [US/US]; The University of Houston, Assoc. Gen. Counsel, Off. IP Management, 316 E Cullen Building, Houston, Texas 77204-2015 (US).

(72) Inventor: XIE, Leiming P. [US/US]; 6310 Rampart Street, APT 30, Houston, Texas 77081 (US).

(72) Inventors; and

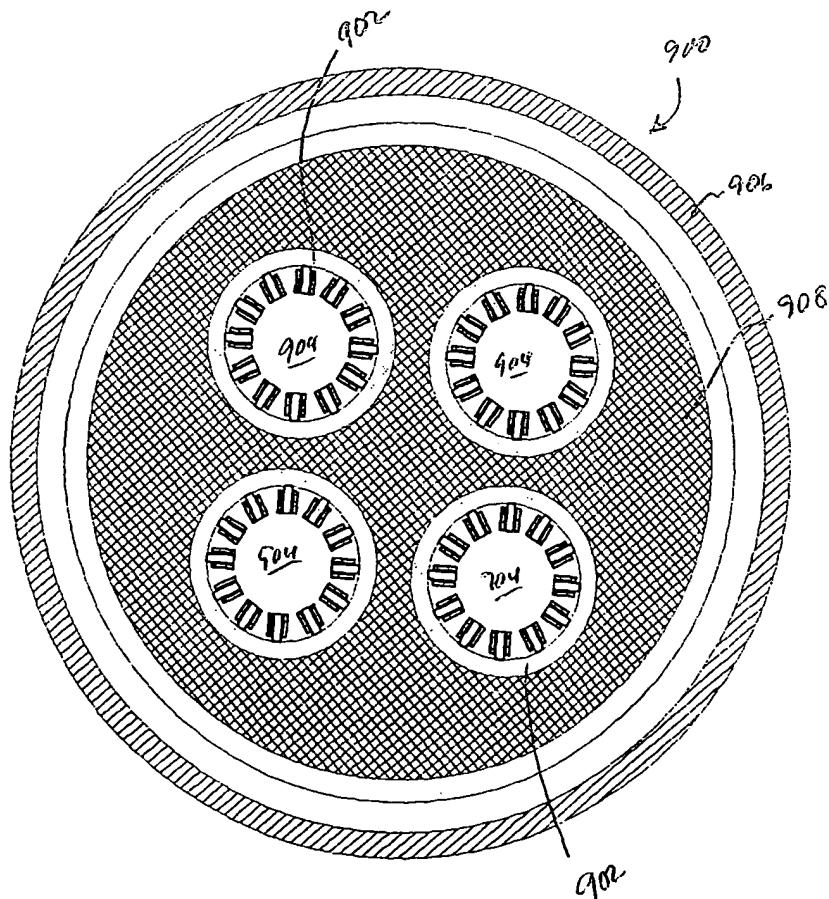
(75) Inventors/Applicants (for US only): WOSIK, Jaroslaw [PL/US]; 2807 Conway, Houston, Texas 77025 (US). NESTERUK, Krysztof [PL/PL]; Szegedynska 5 m.92, PL-01-957 Warsaw (PL).

(74) Agent: STROZIER, Robert, W.; P.O. Box 429, Bellaire, Texas 77402 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,

[Continued on next page]

(54) Title: SUPERCONDUCTING LOOP, SADDLE AND BIRDCAGE MRI COILS



(57) Abstract: New MRI coil and resonators are disclosed based solely on superconducting inductive element and built-in capacitive elements as well as hybrid superconducting-metal inductive and capacitive elements having superior SNR. Single and multiple small animal MRI imaging units are also disclosed including one or more resonators of this invention surrounding one or more small animal cavities. Methods for making and using the MRI coils and/or arrays are also disclosed.



TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

Published:

— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.